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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,454	02/25/2002	Alfred Wade Muldoon		4361

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EXAMINER

KURR, JASON RICHARD

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/082,454	<b>Applicant(s)</b> MULDOON, ALFRED WADE	
	<b>Examiner</b> Jason R. Kurr	<b>Art Unit</b> 2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 February 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 5 and 12 recite the limitation "the expected unenergized state". There is insufficient antecedent basis for this limitation in the claim. It is unclear to the examiner as to what the "expected unenergized state" is referring to when it is directed to as "being safe".

Claims 1, 5 and 12 recite the limitation "the application". There is insufficient antecedent basis for this limitation in the claim. It is unclear to the examiner as to what the "the application" is referring to.

Claims 1, 5, 11, 14, 15, 17 and 20 recite the limitation "otherwise known" or "otherwise unknown". The use of the word "otherwise" renders the claim as indefinite because it is unclear to the examiner as if the intended states should be known or unknown to the control.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Barnett et al (US 5,870,317).

With respect to claim 1, Barnett discloses an electronic control (fig.1 #14) including sensing means to scan the energizing circuitry of one or more transducers (fig.1 #12, col.5 ln.40-67, col.6 ln.1-7), the expected unenergized state of said transducers being safe in the application, said circuitry including switches (fig.1 #12, col.1 ln.62-67, col.2 ln.1-10) whose intended states are otherwise known to said control, said sensing means enabling said control to identify said switches as functional or non-functional (col.4 ln.60-64), said control preventing any of said switches identified as non-functional from causing improper transducer operation by opening one or more of said switches identified as functional (col.5 ln.15-19, col.11 ln.51-57).

With respect to claim 2, Barnett discloses the control in accordance with claim 1 wherein said sensing means also determines the state of at least one externally operated switch (fig.1 #16) in said circuitry whose intended state is otherwise unknown to said control (col.12 ln.32-40).

With respect to claim 3, Barnett discloses the control in accordance with claim 1 wherein at least one sensor of said sensing means scans said switches (fig.1 #12a-n) in a plurality of circuits of said circuitry (col.12 ln.57-59).

With respect to claim 4, Barnett discloses the control in accordance with claim 1 wherein said control signals the operator it has identified one or more of said switches as non-functional (col.12 ln.42-50).

With respect to claim 5, Barnett discloses an electronic control (fig.1 #14) including sensing means to scan the energizing circuitry of one or more transducers (fig.1 #12), the expected unenergized state of said transducers being safe in the application, said circuitry including switches (fig.1 #12, col.1 ln.62-67, col.2 ln.1-10) whose intended states are otherwise known to said control, said sensing means enabling said control to identify said switches as functional or erroneously closed (col.4 ln.60-64), said control using at least one of said switches identified as functional as backup to prevent any of said switches identified as erroneously closed from causing improper transducer operation (col.15 ln.29-40).

With respect to claim 6, Barnett discloses the control in accordance with claim 5 wherein at least one of said switches can be independently opened by either said control or an override (col.13 ln.29-36).

With respect to claim 7, Barnett discloses the control in accordance with claim 6 wherein said control signals the operator it has identified one or more of said switches as erroneously closed (col.12 ln.42-50).

With respect to claim 8, Barnett discloses the control in accordance with claim 5 wherein said control continues operation using said backup to ensure correct transducer operation (col.15 ln.29-40).

With respect to claim 9, Barnett discloses the control in accordance with claim 8 wherein said control signals the operator it has identified one or more of said switches as erroneously closed (col.12 ln.42-50).

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With respect to claim 10, Barnett discloses the control in accordance with claim 5 wherein at least one sensor of said sensing means scans said switches in a plurality of circuits of said circuitry (col.12 ln.57-59).

With respect to claim 11, Barnett discloses the control in accordance with claim 5 wherein said sensing means also determines the state of at least one externally operated switch (fig.1 #16) in said circuitry whose intended state is otherwise unknown to said control (col.12 ln.32-40).

Claims 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Holling (US 5,064,998).

With respect to claim 12, Holling discloses an electronic control (fig.2 #66) monitoring the frequency at which one or more transducers (fig.2 #14,16,18,20) are switched (col.4 ln.18-35), the expected unenergized state of said transducers being safe in the application, said control prolonging the period said transducers are off by opening a switch in the energizing circuitry of said transducers if said frequency becomes destructive (col.4 ln.36-54).

With respect to claim 13, Holling discloses the control in accordance with claim 12 wherein said control monitors said frequency using sensing means (fig.2 #50,52,54,56) that scan the energizing circuitry of said transducers (col.3 ln.33-40).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holling (US 5,064,998) in view of Barnett et al (US 5,870,317).

With respect to claim 14, Holling discloses the control in accordance with claim 13 wherein said circuitry includes switches (fig.2 #24,26,28,30) whose intended states are otherwise known to said control (col.4 ln.18-35).

Holling does not disclose expressly wherein the sensing means enables the control to identify the switches as functional or non-functional.

Barnett discloses a control circuit (fig.1 #14) wherein the sensing means enables said control to identify switches (fig.1 #12) as functional or non-functional (col.4 ln.60-64), said control preventing any of said switches identified as non-functional from causing improper transducer operation by opening one or more of said switches identified as functional (col.11 ln.51-57).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the control and sensing means of Barnett in the invention of Holling to determine whether the switches are functional.

The motivation for doing so would have been to automatically test the switching relays of Holling without having to manually test their functionality. This would have allowed for a quicker detection of a problem in the circuit.

With respect to claim 15, Holling discloses the control in accordance with claim 14 wherein said sensing means also determines the state of at least one externally operated switch in said circuitry whose intended state is otherwise unknown to said control (fig.3A #82,90,94,98, col.4 ln.55-68, col.5 ln.1-33). It is inherent that the requests for the relays to turn on/off would come from a user operated external switch.

With respect to claim 16, Holling discloses the control in accordance with claim 14 wherein at least one sensor (fig.2 #50,52,54,56) of said sensing means scans said switches in a plurality of circuits (fig.2 #24,26,28,30) of said circuitry (col.3 ln.33-35).

With respect to claim 17, Holling discloses the control in accordance with claim 14 wherein said circuitry includes switches (fig.2 #24,26,28,30) whose intended states are otherwise known to said control (col.4 ln.18-35).

Holling does not disclose expressly wherein the sensing means enables the control to identify the switches as functional or erroneously closed.

Barnett discloses a control circuit (fig.1 #14) wherein the sensing means enables said control to identify switches (fig.1 #12) as functional or erroneously closed (col.4 ln.60-64), said control using at least one of said switches identified as functional as backup to prevent any of said switches identified as erroneously closed from causing improper transducer operation (col. 15 ln.29-40).



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At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the control and sensing means of Barnett in the invention of Holling to determine whether the switches are functional and to prevent non-functional switches from operating.

The motivation for doing so would have been to automatically test the switching relays of Holling without having to manually test their functionality. This would have allowed for a quicker detection of a problem in the circuit and would have prevented non-functional switches from operating, resulting in preventing the heating elements of Holling from operating at unwanted temperatures.

With respect to claim 18, Holling discloses the control in accordance with claim 17, however does not disclose expressly wherein at least one of said switches can be independently opened by either said control or an override.

Barnett discloses a switch monitoring system wherein at least one of said switches can be independently opened by either a control or an override (col.13 ln.29-36).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the override of Barnett to open one of the switches of Holling.

The motivation for doing so would have been to manually shut down one of the heating elements during repair.

With respect to claim 19, Holling discloses the control in accordance with claim 17 wherein at least one sensor (fig.2 #50,52,56,58) of said sensing means scans said switches in a plurality of circuits (fig.2 #24,26,28,30) of said circuitry (col.3 ln.33-35).

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With respect to claim 20, Holling discloses the control in accordance with claim 17 wherein said sensing means also determines the state of at least one externally operated switch in said circuitry whose intended state is otherwise unknown to said control (fig.3A #82,90,94,98, col.4 ln.55-68, col.5 ln.1-33). It is inherent that the requests for the relays to turn on/off would come from a user operated external switch.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Snyder et al (US 6,120,449) , Loshbough et al (US 4,307,392) , Goosen (US 4,951,037).

Snyder discloses a method and apparatus for compensating for inoperative elements in ultrasonic transducer arrays.

Loshbough discloses a digital display verification apparatus.

Goosen discloses a display segment fault detection apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R. Kurr whose telephone number is (571) 272-0552. The examiner can normally be reached on M-F 11:00am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 273-8300. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.<sup>1</sup> Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PRIMARY EXAMINER